WHAT IS CLAIMED IS:

1.   An image processing apparatus comprising:

a compression unit to perform a compression process on an image using a JPEG 2000 format;

a decompression unit to perform a decompression process on an image compressed using a format other than the JEPG 2000 format;

a designation allowing unit to allowallowing a designation of a region of interest for an image file stored in a storage region;

a determination unit to determine that the image file corresponds to at least one of a non-compressed file and a compressed file compressed using a format other than the JEPG 2000 format;

a compression execution unit to compress the image file using the JEPG 2000 format by use of the compression unit in a case where the determination unit determines that the image file corresponds to a non-compressed file, and decompressing the image file by use of the decompression unit before compressing the image file using the JPEG 2000 format by use of the compression unit in a case where the determination unit determines that the image file corresponds to a compressed file compressed using a format other than the JPEG 2000 format; and

an extraction output unit to extract from the compressed image file compressed by the compression unit a plurality of blocks corresponding to a region of interest designated by the designation allowing unit, and outputting the extracted image file.

2.   The image processing apparatus as claimed in claim 1, wherein the compression unit performs a lossless compression process on the image.

3.   The image processing apparatus as claimed in claim 1, wherein the compression unit performs a lossy compression process on the image.

4. The image processing apparatus as claimed in claim 1, wherein the compression unit performs a wavelet transform process using a 5 × 3 filter bank.

5. The image processing apparatus as claimed in claim 1, wherein the compression unit performs a wavelet transform process using a 9 × 7 filter bank.

6. The image processing apparatus as claimed in claim 1, wherein the decompression unit performs a decompression process on an image compressed using a DCT (Discrete Cosine Transform) coding format as the format other than the JEPG 2000 format.

7. The image processing apparatus as claimed in claim 1, wherein the extraction output unit extracts and outputs the blocks in units of tiles.

8. The image processing apparatus as claimed in claim 1, wherein the extraction output unit extracts and outputs the blocks in units of precincts.

9. The image processing apparatus as claimed in claim 1, wherein the extraction output unit adjusts a resolution of the extracted image file to be output.

10. The image processing apparatus as claimed in claim 1, wherein the extraction output unit outputs the extracted image file as a monochrome image.

11. The image processing apparatus as claimed in claim 1, wherein the extraction output unit successively outputs layers included in a code stream that is generated in the compression process

performed by the compression unit starting from an upper layer.

12.   An image processing method that is realized using, as a hardware resource, a computer having a compression unit to perform a compression process on an image using a JEPG 2000 format, and a decompression unit to perform a decompression process on an image compressed using a format other than the JPEG 2000 format, the method comprising:

allowing a designation of a region of interest for an image file stored in a storage region;

determining that the image file corresponds to at least one of a non-compressed file and a compressed file compressed using a format other than the JPEG 2000 format;

compressing the image file using the JEPG 2000 format by use of the compression unit in a case where the determination unit determines that the image file corresponds to a non-compressed file, and decompressing the image file by means of the decompression unit before compressing the image file using the JPEG 2000 format by means of the compression unit in a case where the determination unit determines that the image file corresponds to a compressed file compressed using a format other than the JPEG 2000 format; and

extracting from the compressed image file compressed by the compression unit a plurality of blocks corresponding to a region of interest designated by the designation allowing unit and outputting the extracted image file.

13.   A storage medium storing an image processing computer program that is installed in a computer having a compression unit to perform a compression process on an image using the JEPG 2000 format, and a decompression unit to perform a decompression process on an image compressed using a format other than the JPEG 2000 format, the program controlling the computer to perform a method comprising:

performing a compression process on an image using the JPEG 2000 format;

performing a decompression process on an image compressed using a format other than the JEPG 2000 format;

allowing a designation of a region of interest for an image file stored in a storage region;

determining that the image file corresponds to at least one of a non-compressed file and a compressed file compressed using a format other than the JEPG 2000 format;

compressing the image file using the JEPG 2000 format by use of the compression unit in a case where the image file is determined to correspond to a non-compressed file, and decompressing the image file by use of the decompression unit before compressing the image file using the JPEG 2000 format by use of the compression unit in a case where the image file is determined to correspond to a compressed file compressed using a format other than the JPEG 2000 format; and

extracting from the compressed image file compressed by the compression unit a plurality of blocks corresponding to a designated region of interest and outputting the extracted image file.